

ABSTRACT

A fuel cell system 10 that is capable of raising the temperature of a fuel cell stack to a predetermined temperature within a short time without decreasing methanol fuel utilization efficiency includes a fuel cell stack 12. During system startup, the concentration of methanol aqueous solution S which is to be supplied to the fuel cell stack 12 is detected by a concentration sensor 66, and the temperature of the fuel cell stack 12 is detected by a temperature sensor 68. A target concentration of methanol aqueous solution S is determined by making reference to data stored in a memory 78, which indicates correspondence between the temperature of the fuel cell stack 12 and the target concentration of methanol aqueous solution S, and based on the temperature of the fuel cell stack 12 detected by the temperature sensor 68. The amount of input of methanol fuel F is determined based on the concentration of the methanol aqueous solution and the target concentration, and the determined amount of the methanol fuel F is inputted to the methanol aqueous solution S. The amount of input of the methanol fuel F may be determined based on the temperature of the fuel cell stack 12, by using a feedback control so that the temperature of the fuel cell stack 12 will reach the target temperature.